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ABSTRACT

It may be argued that what is considered to be knowledge is intimately related to the manner in which such knowledge is communicated. Thus some social scientists and scientists argue that science itself is a form of communication, and the scientific method it closely bound to the method of interpretation. An important vein of thinking in the social sciences focuses attention upon this purported link between knowledge, and language and symbolism--communication in general. This paper presents a critical study of the contributions of Charles Sanders Peirce, Karl-Otto Apel, and Jurgen Habermas to such thinking in the social sciences. A 62-item list of references is included. (DB)

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By

Mathew Kanjirathinkal

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Communication and the Foundations of the Social Sciences: Contributions of Peirce, Apel and Habermas

by
Mathew Kanjirathinkal*

INTRODUCTION

Contemporary metascience appears to be in disarray and seems to admit defeat in the face of the epistemological crisis which has been precipitated by the onslaught of modernity. Empiricism, which has traditionally been considered the epistemological mainstay of the natural sciences, is also coming under mounting attack by theoreticians of natural sciences who themselves have cast serious doubts on its relevance and validity. A growing number of philosophers of science are now willing to acknowledge the symbolic nature of scientific conceptions and paradigms. This is a trend that is also reflected by the emergent discipline within sociology known as sociology of science. Mainstream social scientists, however, continue to uncritically espouse the Cartesian-Leibnizian solipsistic assumptions of an empiricist epistemology.

Because the essential function of symbolic creations is to facilitate intersubjective communication, it may be argued that science itself is a form of communication, and that scientific method is closely bound to the method of interpretation. In the context of the "linguistic turn" that contemporary philosophy has taken,[1] the Kantian question of "what can I know" calls for a new response that is sensitive to the demands of intersubjective validation of cognitive claims through the medium of language. Within the social sciences, the traditional opposition between explanation and understanding thus gives way to a complementarity thesis that draws on the fuller implications of a linguistically mediated communication, depth-hermeneutics and semiotics. This study seeks to critically pursue the contributions of Charles Sanders Peirce, Karl-Otto Apel and Jürgen Habermas toward the development of such a complementarity thesis. It will be argued that an epistemology that is based upon the fundamental assumptions and *a priori* conditions

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of communication is sociologically more relevant than a solipsistic foundationalism of the Cartesian-Leibnizian variety. It will be further argued that the complementarity thesis needs sociological grounding because science as communication participates in the general socio-historical conditions that determine the origin, development and organization of symbolic structures.

I. Peirce: The Triadic Structure of Knowledge

Peirce owed much to the epistemology of Emmanuel Kant in developing his pragmaticism which is simultaneously a theory of meaning, a theory of inquiry and a theory of knowledge.[2] The fact that he had "devoted two hours a day to the study of Kant's *Critique of Pure Reason* for more than three years" (Peirce, CP:1.4) indicates how seriously he took the question of grounding the fundamental cognitive categories. Peirce shared with Kant the Enlightenment belief that science held the key to human progress and, as such, it needed vigorous theoretical defense. Peirce was a man of science,—a "dweller in a laboratory", as he described himself—who demonstrated his commitment to the cause of science by engaging in experiments, by proposing intriguing theories, as well as by suggesting an elaborate scheme to classify the entire realm of science.[3]

Peirce did not, however, share Kant's foundationalist orientation, the conviction that the validity of every available source of certainty, including common sense and tradition, must be subjected to a process of critique. Even before Kant, a radical form of foundationalism was proposed by Descartes in his doctrine of methodical doubt. In an effort to face the challenge that was posed by the collapse of the medieval world and the epistemological crisis it precipitated, Descartes proposed a subjective turn to reestablish the grounding for the basic cognitive categories and assumptions. He argued that the act of doubting itself revealed the undeniable existence of consciousness, and on the basis of this clear and distinct perception, every belief which had been methodically suspended could be reaffirmed (Decartes, 1934:26-32).

In order to discredit the validity of the Cartesian doubt as a method, Peirce points out several logical and psychological impossibilities: (1) Cartesian doubt, argues Peirce, is not a genuine form of doubt, but rather a "mere self-deception", because we cannot "pretend to doubt in philosophy what we do not doubt in our hearts" (Peirce, CP:5.265); (2) The Cartesian assumption that "whatever I am convinced of, is true" is simply false. Personal con-

viction guarantees neither truth nor certainty. Further, "to make single individuals absolute judges of truth is most pernicious" (Peirce, CP:5 265); (3) The Cartesian form of grounding truth, compared to the medieval method of multiform argumentation, is a weaker form of proving something insofar as it resorts to a method of argumentation with a single thread of argument; (4) In the final analysis, the Cartesian foundationalist takes refuge in an incognizable mystery because it resorts to a Deus ex machina.

Peirce goes on to enumerate four denials which constitute the cornerstone of his theory of inquiry:

> (1) We have no power of introspection, but all knowledge of the external world is derived by hypothetical reasoning from our knowledge of external facts; (2) We have no power of intuition, but every cognition is determined logically by previous cognitions; (3) We have no power of thinking without signs; (4) We have no conception of the absolutely incognizable (Peirce, CP:5.265).

A closer look at the implications of these four denials would yield some insight into Peirce's relationship to British empiricism, Scholastic realism, and Scottish commonsensism.[4] Perhaps, his self-definition as a scholastic realist fits him the best.[5] In explaining the production of reliable knowledge, Scholastic realism, while acknowledging the existence of external referents presented through the senses, insists on subjecting sense experiences to the authority of intellectual judgments before they can be given the status of knowledge as such. Knowledge, accordingly, is not a sheer aggregation or quantitative combination of sense impressions (as empiricism supposes), nor is it a process of pure a priori deduction that is "occasioned" by the mind's accidental contact with the external world (as rationalism would imply), but rather it is a constituted correspondence between the knowing subject and the known object. Siding with the scholastics, Peirce attacks the passivity thesis of the empiricists and states that "our very percepts are the results of cognitive elaboration" (Peirce, CP:5.416).

Peirce is also in agreement with the scholastics in defending the thesis of realism or the doctrine that our universal concepts — Peirce calls them general objects — have a basis in reality, a doctrine that the nominalists have denied. The mainstream scholastics, including Aquinas, maintained that our universal concepts (concepts which describe classes of objects rather than particular objects) are "real" because the individual human minds, through a process of unconscious abstraction, separate the essential from the accidental, in order to arrive at essential definitions of objects.

While accepting the reality of general objects, Peirce disagrees with the scholastics on the process of their constitution. For one thing, he redefines abstraction as selective attention or "the power by which thought at one time is connected with and made to relate to thought at another time" (Peirce, CP:5.295). He argues that because attention aims at educing the general from the particular through sustained and repetitive activity, it is a form of "induction" or an "inference". Basing himself on the Scholastic distinction between a concept (an idea that is free of concrete qualities and quantities) and an image (a representation of an object that includes all the qualitative and quantitative peculiarities), Peirce attacks the Humean and Lockean associationism to further expose the fallacy of the empiricist-nominalist confusion of particular images with general concepts. With the help of intriguing psychological and neurophysiological observations, Peirce points out that we have no proper image of anything in the strict empiricist sense because what is described as an image is a constitution "by the mind at the suggestion of previous sensations" (Peirce, CP:5.303).

Peirce is well aware of the danger of slipping into idealism by stressing the role of the mind in the constitution of objects. Because of this perceived danger, he has always maintained a streak of positivism.[6] He acknowledges that the strength of positivism consists precisely of its ability to serve as a stark antithesis to idealism, and in recognition of the strength that positivism possesses, he describes the pragmatic epistemology as a "species of prope-positivism". Pragmatism shares an affinity with positivism in that only those "problems capable of investigation by observational methods of the true sciences" are considered true problems. He cautions, however, that pragmatism needs to be distinguished from a crass positivism that insists on an individualistic empiricist method of verification in three respects: (1) It retains a purified philosophy, a philosophy that is free of metaphysical gibberish; (2) It accepts "instinctive beliefs" as undoubtable; (3) It insists on "the truth of scholastic realism" (Peirce, CP:5.423).[7] Pragmatism is neither a denial nor a replacement of scholastic epistemology, states Peirce, but a method of purifying it, a means of extracting from it a "precious essence" which will revitalize science and ground moral norms.

While substantially accepting the framework of scholastic realism[8], Peirce endeavors to draw out from it a theory of inquiry that would allow him to defend the hypothetical character of

achieved cognition as it is "determined logically by previous cognitions". The truth value of the existing body of knowledge is neither to be doubted as untrue nor to be affirmed as absolute, but to be acknowledged as hypothetical. While one cannot cogitate in a Cartesian vacuum nor in a Leibnizian isolation, one must be cautious and critical toward the limits imposed by our traditions, our logical categories, our modes of reasoning, our norms of action and the words of our language which threaten to circumscribe the exercise of our searching minds. The real paradox that the act of knowing is involved in, from this perspective, is that we utilize the very medium that we are trying to transcend, because we have no power of intuition or knowledge without the medium of the culturally given tools. Such a paradox accentuates the need for an ongoing epistemological critique.

Thus, upon reflection, it becomes apparent that in the act of grasping the slightest piece of information one plunges himself/herself into the depth of human history which is a continuous struggle to reduce the margin of error without ever being able to be sure that we have eliminated it completely.[9] History, science and society are intimately linked insofar as no isolated individual can succeed in seeking a vantage point outside of history or society from where knowledge can be created or judged. What is real and true is what is agreed upon by the community of inquirers as real and true. Such a community transcends national and historical boundaries, and it alone counts as the real subject of a true cognition. States Peirce:

> The real, then, is that which sooner or later information and reasoning would finally result in, and which is therefore independent of the vagaries of me and you. Thus the very origin of the conception of reality shows that this conception essentially involves the notion of a COMMUNITY, without definite limits, and capable of a definite increase of knowledge. And so those two series of cognition—the real and the unreal—consist of those which, at a time sufficiently future, the community will always continue to reaffirm, and those which, under the same conditions, will ever after be denied" (Peirce, CP:5.311).

The inquiry into the conditions of knowledge thus leads Peirce to the necessity of acknowledging the need for a community unlimited by spatial or temporal boundaries.

The same conclusion may be reached by an inquiry into the logical foundations of the notion of probability on which every scientific truth ultimately rests. Scientific theories, states Peirce, stand somewhere between "fortune telling" and "metaphysical gabble" (Peirce, CP:5.541). When scientists pretend that they can

predict the occurrence or non-occurrence of an event with absolute certainty, they degenerate into the ranks of false prophets and fortune tellers, just as when they deny all possibility of approximation to truth they take flight into the reals of metaphysics. Relying on the classical definition of probability — "the ratio of the favorable cases to all cases"[10], Peirce advances an interesting argument for a sociologically based epistemology. He notes that probability is a problem of the general logic of inquiry applied to numbers, inasmuch as it involves the question of quantitatively inferring the chance of an event occurring based on given premises. To determine with any degree of accuracy the truth of the logic of chance as applied to a particular event, the inference is obviously based on a sufficient number of repetitions. With each repetition, the inference is made more accurate so that it may be stated that the very logic of probability inference requires an indefinite number of repetitions. Because of the logically required need for an indefinite number of repetitions, the probability of an inference concerning the occurrence of an event is never fully verifiable or predictable in an individual's or community's life-time. Yet, all human affairs including scientific enterprises are based on the idea of probability and the belief that we can increasingly approximate truth and minimize error. Thus, the logic of probability as a part of the logic of inquiry requires the possibility of an unlimited communication community. States Peirce:

> It seems to me that we are driven to this, that logicality inexorably requires that our interests shall not be limited. They must not stop at our own fate, but must embrace the whole community. This community, again, must not be limited, but must extend to all races of beings with whom we can come into immediate or mediate intellectual relation. It must reach, however vaguely, beyond this geological epoch, beyond all bounds. He who could not sacrifice his own soul to save the whole world, is, as it seems to me, illogical in all his inferences, collectively. Logic is rooted in the social principle (Peirce, CP:2.654).

The conclusion that the logic of science by its very nature presupposes a society is a far cry from the assumptions of empiricism and positivism and all other forms of individualist epistemologies.[11]

The equation of science with logical inquiry and logical inquiry with participation in the communion of social actors as inquirers is, it may be recognized, a pragmatic translation of Hegelianism. The dialectical self-transcendence of the mind is pragmatically interpreted as the scientific self-improvement of the society through

continuous inquiry. However, in sharp contrast to Hegel's visualization of the end of history as consisting of the mind's becoming conscious of its essential self-consciousness, Peirce posits that history is a process of continuous struggle for truth with no conceivable end or beginning.

The pragmatic epistemology coalesces with a theory of society in several ways: (1) The conception of what is real is the result of an agreement among inquirers; (2) The process of verification of what is agreed upon as real is never completed; (3) As continuous inquiry and verification, the search for the real requires an unlimited community. The emerging conception regarding the nature of this society is that it consists of communication centered around the concern to "find things out". Such a society, it seems to me, is an ideal one. Peirce, as one who has personally experienced the bitter effects of struggle for fame and power that existed in the institutions of higher education then (as it exists now), may be rightly faulted for not acknowledging the role of such non-rational factors as institutional power, class interests and other socio- historical conditions that shape the process of scientific development. Science as a cultural process shares in all other social and cultural dimensions including competition, careerism, nationalism, religious beliefs, economic conditions, and political struggles, to mention a few non-rational factors.[12] Like Hegel, Peirce appears to be abstracting logic from the "material" struggle of groups of people, and in so doing, assumes a posture of unwarranted optimism, which was shared by most people in the Western world toward the end of the nineteenth century, for he insisted that the pragmatic meaning of truth lies in the future. A society such as the United States, which was culturally and economically still developing and which looked at tradition with an amount of disdain, thrived on the belief that the future would be more logical, more just, more truthful and more sociable. Whether this futuristic orientation has been validated by the actual historical turn of events is, of course, debatable. True, technically oriented sciences have made unprecedented advances. However, the question remains as to whether these advances have widened the communicative basis of societies.

Semiotics:

An essential component of Peirce's pragmaticism as a theory of meaning is his doctrine of signs or semiotics. Fundamental to the notion of sign is the idea of mediation, an idea that forms the core of

Hegel's dialectics. Peirce acknowledges his indebtedness in this regard when he states:

> ...Pragmaticism is closely allied to the Hegelian absolute idealism, from which, however, it is sundered by its vigorous denial that the third category (which Hegel degrades to a mere stage of thinking) suffices to make the world, or even so much as self-sufficient.. For pragmaticism belongs essentially to the triadic class of philosophical doctrines, and is much more essential so than Hegelianism is" (Peirce, CP:5.436).

In order to understand the significance of Peirce's reference to Hegel in his endeavor to construct a theory of signs, it is necessary to return to his realistic epistemology. As was stated above, Peirce is a realist in his theory of knowledge. Almost repeating verbatim the scholastic definition of what is considered real — that whose existence is real independent of its being thought of by particular knowers —, Peirce asserts that "that which any true proposition asserts is real, in the sense of being as it is regardless of what you or I may think of it" (Peirce, CP:5.432). Again, almost in a positivistic overtone, Peirce states: "Facts are hard things which do not consist in my thinking so and so, but stand unmoved by whatever you or I or any man or generation of men opine about them" (Peirce, CP: 2.173). However, Peirce is not a positivist by any definition. Precisely because of his belief that the reality of the real has the character of a sign. The knower's relationship to the known is mediated, not through neurophysiological impressions that are produced on the central nervous system by properties of the material objects, but by the operation of a sign. Therefore, contends Peirce, "every thought is a sign" (Peirce, CP:5.470). Sign necessarily involves a triadic relation or mediating function between an object and an interpretant so that it may be stated that cognition is a "triadic action" or a semiotic action.

Peirce defines sign as "something which stands to somebody for something in some respect or capacity" (Peirce, CP:2.228). Sign represents a dynamic relationship between the three constitutive elements which make up an act of cognition: (1) an "interpretant" or the concept created in the mind of the person who is addressed by the sign; (2) an "object" or that for which the sign stands; and (3) the "ground" which is the respect or aspect under which the sign stands for something in terms of the phenomenological categories of "Firstness, Secondness and Thirdness", sign is the First which stands in a triadic relation to a Second (object) in view of "determining a Third called interpretant to assume the same triadic rela-

tion to its object in which it stands itself to the same object" (Peirce, CP:2.274).

Although anything may assume the nature of a sign — a sentence, a book, a statue, etc., — the most prominent form of sign is language. Because by its very nature a sign can "represent" an object, a person is expected to have some prior information about the object in order to understand its conceptual depth or logical extension. The object represented by the sign may be as narrow as a single thing or as broad as a society. Although meaning as such belongs to the aspect of Thirdness, it is inseparable from the triadic structure of semiotic action. The weakness of empiricism, nominalism and positivism is that it reduces thought to a dyadic relation between subject and object.

Since the interpretant is the most important part of the semiotic action, and it consists in a "synthetical consciousness", between the sign and the object, human cognition is both mediated and creative. Any prior information about the object is itself mediated through a sign, and any new knowledge serves as a sign for future knowledge. The fragile connection between the object, the sign and the interpretant is open to unending examination by the community of inquirers.

Science as Fixation of Belief

When Kant raised the question of how synthetic *a priori* principles were possible, he was, obviously, unable to relate it to the problem of probability reasoning. He attempted to quiet the turmoil of uncertainty by proposing that the universality and the necessity of scientific axioms result from the universal *a priori* conditions of experience. The problem of probability and the logic of induction continues to stir up epistemological disquietitude in the heart of every science. Science and fallibilism sleep together. Since the foundationalist epistemologies have failed to separate them, Peirce proposes not their divorce, but an acceptable form of reconciliation.

The fundamental problem of induction is to demonstrate connection between sets of occurrences. How is this linkage ascertained if probability testing is essentially impotent to demonstrate its universality and necessity? Put differently, if a dice is thrown, the probability of either a three or a six turning up is one in three. However, in actual throws, there is no infallible assurance that every third throw will be either a six or a three. In principle, there is no logical contradiction in supposing that the die might not turn up a six even once in an endless series of throws. What then gives

us the intellectual motivation to *believe* that there is an association between the number of times a three or a six turns up and the total number of throws that have been made? In the case of a scientific statement, what makes us *believe* that the predicate is necessarily associated with the subject? Kant's answer was that the association does not emanate from any characteristic of the objects themselves but from the peculiar structure of the mind. Or as Peirce puts it: "synthetic inference is founded upon a classification of facts, not according to their characters, but according to the manner of obtaining them" (Peirce, CP:2.754).

It is the knowing subject's "inborn" tendency, thinks Peirce, to classify and associate objects in a certain manner. This tendency is essentially found in our animal instinct. Hence, "all human knowledge, up to the highest flights of science, is but the development of our inborn animal instincts" (Peirce, CP:2.754). Induction is nothing more than a method of persistently and indefinitely refining this instinct with the hope that the knower is getting increasingly nearer the truth in the long run. As one approximates truth, the struggle caused by the "irritation of doubt" gets increasingly reduced, opinion is settled and belief is fixed. Undoubtedly, these ideas reflect a streak of biologism that runs through Peirce's thought, consistent with the general culture of evolutionism that was pervasive in the nineteenth century intellectual climate. Science and animal instinct, experiment and processes of nature, logic and chance occurrences, individual and community, past and future are all inextricably linked together so that there is no room for dualism either in epistemology or in real life. The overcoming of the sharp demarcations and boundaries between various manifestations of life[13] is the permanent legacy and message of the theory of evolution.

II. Apel: The A Priori of Communication

Both from an epistemological and substantive point of view, questions concerning the nature of social sciences will determine the choice of an appropriate method. The problem of a generalized scientific method is particularly significant and controversial because of the commonly accepted distinction between human and non-human realities. If in the case of the humanities, the fact that the object of science is also the subject of science makes a difference, then Apel's pointed question concerning methodology is particularly relevant:

> Should the humanities imitate the methods that have been so successful in the natural sciences in order thus to arrive at the status of genuine science, also? or should they perhaps develop methods which are complementary to those used in the natural sciences, *methods that flow* from their own leading knowledge interests? (in Dallmayr and McCarthy, 1977:292-93).

The question, Apel points out, is not entirely a question without practical consequences because if social sciences are unreservedly allied with natural sciences, the former can easily be turned into techniques of manipulation, conditioning and control with the result that the society will perpetuate and widen the cleavage that already exists between managerial experts and manipulated men and women on the streets. As Apel points out, the prevalent epistemology that underlies scientific praxis is that of logical positivism, according to which individual scientists strive to "win objective knowledge about the world without at the same time presupposing knowledge by sign interpretations or intersubjective understanding" (in Dallmayr and McCarthy, 1977:294). Nagel's statement, that "it has been the perennial aim of theoretical science to make the world intelligible by dissolving fixed patterns of regularity and orders of despondence in events" (Nagel, 1959:58) articulates that mainstream positivist epistemology guided by the Newtonian-Cartesian paradigm. The word is assumed to resemble a giant machine with interrelated parts, acting in perfect order and regularity, according to predetermined laws. It is the task of individual scientists to discover this order by observation, experimentation and logico-mathematical analysis. It is assumed that, in this respect, science shares no goals in common with the humanities. Prior puts it: "science demands accuracy and eschews error — it is concerned with truth...The final products of scientific activity...are by their nature dissociated from the values and personal virtues which were involved in the human activity which produced them" (Prior, 1962:17). An important difference, therefore, between science and the humanities is the *impersonality* of the former. The person of the scientist, his/her social status, cultural values, social conventions, language use and other aspects that appear prominent in the humanities are discarded as irrelevant and undesirable.

However, Apel points out that logical positivism, with its logic of science tacitly assumes several metascientific presuppositions which negate its professed stance and reveals its weaknesses. These presuppositions include: (1) the belief in the existence of facts which can be intersubjectively recognized as facts; (2) "the

presuppositions of an ideal language of science" which can harmoniously combine logic and facts; and (3) the irreducible "conventions" already in use by ordinary language to make statements of observations in the form of "hypotheses" or "theories". These presuppositions and the use of social conventions are not rationally justified by any scientific method including observation or induction. This points out the limitations of an impersonal individualist rationality that positivism assumes because use of language and conventions implies acceptance of the rules that are constituted and followed by a communication community and the practice of intersubjective discourse (Dallmayr and McCarthy, 1977:295-96). The fundamental error that traditional empiricism and neo-positivism, as well as the Cartesian-Leibnilzian rationalism, makes is the assumption of a methodological solipsism or the assumption that science is a private matter between an individual and his/her object of study.

By tracing the development of logical positivism, Apel brings out another serious problem this epistemology faces. From its beginning with B. Russel, Wittgenstein and Carnap, logical positivism with its plan of constructing a scientific thing-language called semantics, could not satisfactorily explain the truth function of certain forms of sentences such as "intentional" sentences or "belief" sentences of the Form "A believes P", without reducing them to statements of relationship between states of affairs. This reductionism forced Wittgenstein to deny the very existence of subjects who thought or entertained ideas. Social sciences could, in this schema, concern themselves only with behaviors, not with mental states or persons with minds. Further, in sentences which deal with the meaning of a sentence, the subject of the sentences deals with itself, and since the existence of a subject was inadmissible, Wittgenstein found himself declaring that his own sentences about semantical sentences were meaningless. In its final stage, logical positivism abandoned the project of constructing a universal scientific thing-language. Instead, it considered its task the descriptive analysis of the use of everyday language, and the later Wittgenstein proceeded to develop the notion of "Language Game" to explain the meaning of intersubjective communication, and such subjective experiences as "meaning," "believing," "understanding," and the like. In spite of Wittgenstein's admission of the failure of methodological solipsism, the project of constructing a unified science and a scientific language was not abandoned by later representatives of logical positivism including Hempel, Nagel[14] and

others, who believed in the assumptions of an individualist epistemology.

"A Priori" of Communication

In light of the reflections on the limitations and the contradictions of methodological solipsism, Apel proposes the "A Priori of Language Communication" as the adequate basis for the foundation of sciences in general and humanities in particular. First, to the extent that facts under scientific scrutiny must be recognized as facts by the community of scientists, the constitution of objects themselves is a linguistically determined social activity. Second, because every description is guided by an anticipatory explanation within the framework of a theory that can be understood by more than one person, scientific statements are inextricably embedded in interpretation and communication. As may be evident from the fact that scientific statements are not pictures of reality — which is admitted even by the hard-core language analysts — but rather hermeneutic construction of meanings, scientific descriptions are inseparable from socially conditioned interpretations. Third, since socially accepted conventions are necessary to construct semantical frameworks, scientific or rational language is rooted in the dimensions of ordinary language and ultimately in the life form of the community, as Wittgenstein has recognized. In other words, the practice of science is part and parcel of the social praxis.

Apel does not deny the need for description and explanation, but proposes understanding and interpretation as being "complementary" to them; "cognition by objectifying and cognition as intersubjective understanding supplement and exclude one another at the same time" (in Dallmayr and McCarthy, 1977:307). They exclude each other insofar as they represent two types of interest: the technological interest to manipulate the object, as is done in the instrumental action of labor, and the interest to enhance understanding between subject and object as partners in communication. One may, for instance, treat the utterances of another human being as a verbal behavior and reduce him/her to an object, whereby not include him/her as a partner in communication or enter into the sphere of intersubjectivity by adopting an attitude of dialogue. Both of these interests represent two moments of the development of knowledge and are dialectically related to each other. Positivist-empirist epistemologies neglect to acknowledge the relevance of the interpretative moment by exclusively focusing on the explanatory moment. While both the explanatory and interpretative moments underlie the development of all sciences including the

natural sciences, their relevance is particularly obvious in the case of the humanities. However, the interpretative method of the humanities thus forms a complementary and indispensable part of scientific inquiry.

Apel realizes that "in order to survive as members of social systems" (in Dallmayr and McCarthy, 1977:309), one has to utilize the objectifying, calculative and manipulative techniques that are being advanced by sciences including entire branches of humanities such as the behavioral sciences. However, his argument is that human sciences with explicit interest in interpretation and communication must also be allowed to advance mainly for two reasons. First, humanities so developed can narrow the gap between "experts" and common people; secondly, hermeneutically based human sciences are needed to clarify values to suggest "world-views and ways of life" that provide "criteria" for the application of science itself.

Just as Apel chides the neo-positivistic logic of inquiry for its claim of monopoly of what counts as scientific inquiry, he faults hermeneutics and the neo-Wittgensteinian onto-semantic conceptions for presenting themselves as alternative modes of explanation He argues that by doing so the latter remain "exposed to the temptation to confuse hermeneutic understanding with an explanatory act of a peculiar kind" (Apel, 1984: 189).

While accepting the need for an interpretive moment, Apel rejects the Gadamerian type of "pure" hermeneutics that does not seem to show sufficient concern for demonstrating the validity (objectivity) of interpretation by individual hermeneuticians. Pure hermeneutics that altogether rejects the relevance of spatio-temporal objectifications and causal explanations tends to be subjectivistic, and, consequently, idealistic in orientation. Although hermeneutics is justified in rejecting the one dimensional reductionism of empiricism and logical positivism, it errs by making the contrary assumption about us human beings, that we are so totally rational and fully transparent to ourselves as to be able to understand ourselves by individual self-reflection.[15] It ignores the fact that, according to Apel, humans are still "natural beings" involved in historical processes and causal determinations which evade our consciousness. For instance, motivations unknown to ourselves, are operative in individual biographies[16] and social histories which have, as history amply testifies, driven us as individuals and communities into unthinkable irrationalities. In spite of the claims of philosophers and sages who have painted for us their visions of the endpoint of history and communicated their understanding of the

final truth[17], and the efforts of isolated individuals who have attempted to transcend the limits of national, cultural and political determinations, we are not sufficiently convinced that we are always and unconditionally the self-conscious creators of our own destiny. In spite of the growing belief that we moderns have somehow passed from pre-history to history proper, we continue to stare in the face of those personal and social experiences which reveal our consanguinity with the lower species of the animal world and material nature. As long as we remain, however partially, subject to "nature" and its determinations, we cannot claim, with any degree of confidence, that human sciences should never objectify human behavior.

In order to fully appreciate Apel's discussion of the limitations of hermeneutics, it must be located within the context of the recent methodological controversy in German social sciences. In understanding and interpreting the classics, the core question is how the interpreter can distinguish the original intention of the author from what the text means to its current reader (Bauman, 1978:7). This is because a written text as a sign is an embodiment of a particular culture. Historically, the concern with interpretation originated with the efforts of German protestant theologians who attempted to develop a reliable method of interpreting the Bible, in an era when the Bible replaced the traditional authority of the church organization (Palmer, 1969:34). The broader application of hermeneutics as a method emerged when it was found that the hermeneutical approach could be fruitfully applied to the understanding of all cultural and historical creations. Bleicher defines hermeneutics loosely as "the theory or philosophy of the interpretations of meaning" (Bleicher, 1980:1). Firmly rooted in Kantian and idealist epistemology, hermeneutics assign an active role to the subject in trying to understand objects which are treated as signs which need interpretation. Hermeneuticians also lay stress on meaning-intentions of the text which allows them considerable creativity while understanding the purported meaning of the text. Any part of the text is interpreted in light of the intention of the whole text while elucidation of the meaning of a part sheds light on the whole leading to an ever widening hermeneutical spiral or circle, as some authors prefer to describe it. In the hermeneutical process, no interpretation is the correct or the final one (Held, 1980:313). Hermeneutics is perhaps best described as a dialogue between the interpreter and the interpretandum in which the interpreter through the mediation of the interpretandum becomes increasingly transparent to himself/herself. The final goal of inter-

pretation is thus self-understanding, whether the self is thought of as an individual or a society.

Apel sees his position as advocating a "complementarity thesis" that recognizes that "cognition by objectifying" supplements cognition by "intersubjective understanding" in a dialectical fashion. The complementarity thesis has methodological, epistemological and sociological implications. Methodologically, research programs that are solely inspired by a positivistic ideology run the risk of ignoring the communicative and cultural preconditions for the selection, formulation and pursuance of researchable issues. By doing so, they may miss questions concerning contents that are not embedded in quantifiable spatio-temporal dimensions. On the other hand, a hermeneutical approach that is not tempered by making allowance for a quasi-naturalistic explanation would limit the scope of research itself by pre-judging as irrelevant those questions which might otherwise yield revealing answers. As "objectified manifestations of the meaning intentions of their authors" historical and cultural texts need to be subjected to generalizing questions with the goal of revealing the "meaning and reasons" of the actions of human beings in a spatio-temporal frame (Apel, 1972:31). Such objectification is unavoidable when one pursues questions concerning what, in fact, happened, what caused the event to occur, and what generally happens under similar circumstances.

Epistemologically, Apel's complementarity thesis is intended to serve as a alternative response to the question concerning the conditions for the possibility of valid knowledge. Such an answer, he recognizes, needs to be as fundamental as what Kant gave, without being forced to accept the Kantian epistemological presupposition. While Kant, as a result of his radical critique, was led to postulate a synthetic unity of consciousness as a necessary *a priori* for the possibility of knowledge, Apel's explanation of the process of cognition, based on his interpretation of the contemporary philosophical trends forces him to assert a different, but parallel *a priori:* the existence of a communication community. The human society as a community of interpretation and experimentation, Apel holds, is the transcendental subject of knowledge that guarantees its unity and validity.

With his complementarity thesis Apel recommends that social scientists appreciate the implications for society of the requirements of the two leading cognitive interests: (1) the technological interest that inspires the activities of description and explanation in terms of causal linkages so that social phenomena

can be controlled and predicted; and (2) the communicative interest that stresses the need for improved communication between scientists and technocrats, between those in power and the society as a whole. To counter the one-sided tendency of those who pursue power and to enlist the service of science in the interests of manipulating those who lack power, interpretative human sciences can help raise questions concerning "ultimate values", possible goals of social life, views about what is considered "good life", and grounding "world-views". As a socially concerned and sensitive thinker, Apel does not doubt that "all social engineering has to be counterchecked by an improvement of inter-subjective understanding complementary to objectifying and manipulating men" (Apel, 1972:31).

Apel's complementarity thesis is particularly relevant in the context of the long-standing methodological controversy between proponents of "explanation" and theoreticians of understanding.[18] The controversy is far from being over as it is still relevant because, as he notes, social sciences are "more susceptible to ideology" than are the natural sciences (Apel, 1984:248), insofar as they bear the burden of the construction and critique of ideology, while the natural sciences more or less blindly serve whatever ideology or political power wields authority in a society at a given time.

The complementarity thesis or transcendental pragmatics contends that causal explanations presuppose an understanding of experimental action and, consequently, they presuppose an "agreement among scientists as to the grounds of experimental actions" (Apel, 1984:192). Recognition of the need to search for understanding among scientists as subjects and the need for a linguistically mediated explanation of the understanding is to admit that scientific explanations are not of a dyadic character such as "X explains Y", rather they are of a triadic form that may be expressed as "X explains Y for the subject of knowledge Z" (Apel, 1984:190). This admits that "transcendental pragmatics" is a pre-condition for the possibility of scientific knowledge itself. If it is argued that one person alone can carry on an experiment and advance science, Apel could point out, again, that scientific activity as a rule- governed activity, in the neo-Wittgensteinian sense, in fact requires the scientist to "refer to the community of the scientific tradition" (Apel, 1984:197) in order to function as a scientist. Apel believes that a transcendental-pragmatic logic of science would "free" the understanding of science "from its 'scientistic' limitations" so as to allow a wider conception that would include activities which seek

answers to "fundamental human questions in a methodical, disciplined way" (Apel, 1984:199).

As stated above, Apel's complementarity thesis ultimately involves a "transcendental pragmatic transformation of Kant's transcendental philosophy" (Apel, 1984:232), insofar as it is a modern response to Kant's question concerning the possibility and validity of knowledge. Such a transformation involves the discipline of "pragmatics" which "does not lead back to the historical Kant nor even to the nineteenth century type of neo-Kantianism" (Apel, 1980:80). Central to the pragmatic[19] transformation of transcendental philosophy is Apel's interpretation of the Peircean theory, semiotics. If we "look back at Peirce's pragmaticism from the perspective of the present", contends Apel, "then we see in it primarily the outline and a program of a 'logic of science' for the future" (Apel, 1981:192). He argues for his use of Peirce to transform the Kantian philosophy by interpreting the various periods of Peirce's intellectual journey.

During the first period, which extends from Peirce's earliest writings until the founding of the Metaphysical Club in 1971, the prevailing influence on his thought was that of the Kantian philosophy. This is evident from his critical study of Kant and his attempt to develop a "new list of categories" to deal with the Kantian question. Peirce's main goal during this time span, which may be characterized as the period of "meaning-critical realism", is to transform the critique of knowledge to a critique of meaning. Apel claims that Peirce achieves this transformation by defending the validity of synthetic *a priori* judgments by "performing a transcendental deduction of the three types of signs parallel with the three kinds of inferences as illustrations of the three universal categories" (Apel, 1980:84).[20]

In place of Kant's distinction between phenomena and the unknowable thing-in-itself, Peirce draws a distinction between what is actually known and what is knowable in the long run. Peirce rejects the notion of something totally unknowable as meaningless. The definition of the real or what is knowable in the long run involves the notion of an unlimited community of investigators as may be gathered from the position that the "real is the idea in which the community ultimately settles down" (Peirce, CP:6.610). Apel argues that this position amounts to replacing the Kantian transcendental ego with the idea of the unlimited community as the ultimate subject that constitutes the object. The ultimate ground for the validity of knowledge is thus removed from the beginning of the inquiry to the endless future of the inquiry. Furthermore, the

logic of a self-correcting, ongoing inquiry replaces the Kantian transcendental logic.

Apel notes that the discovery of abduction or inference by hypothesis makes it possible for Peirce to defend the possibility and validity of scientific statements or synthetic *a priori* judgments, to use the Kantian terminology. The suggestion by abduction, which is an unconscious process of inference, is the beginning of the logic of inquiry and is open to continuous testing by the method of induction. Abduction, in combination with the logically secondary process of induction, provides, according to Peirce, a satisfactory answer to the Kantian question of how scientific judgments are possible and how they are defensible. Further, the Peircian epistemology takes the view that the universality and the necessity of our synthetic *a priori* judgments are derived not from the *a priori* categories of the individual mind, but from the inter-subjective consensus that is arrived at by inquirers.

After performing the above described semiotic transformation of the transcendental philosophy, reminiscent of Kant's Copernican revolution, Peirce also "claims for himself the Copernican step" (Apel, 1980:82). With the notable difference that while Kant's Copernican revolution landed him in a form of nominalism — despite his intentions — , Peirce accomplishes a realist revolution. The end result of this pragmatic transformation of the Critique of Pure Reason by Peirce, considered the "Kant of American Philosophy" (Apel, 1980:80), is, according to Apel, a renewed vindication of the Kantian thesis that a "transcendental" foundation — a foundation that is independent of individual consciousness — is both necessary and possible.[21]

The second period of Peirce's thought, as Apel sees it, spans from 1871 to 1884, during which time the philosophy of pragmatism was formally founded. Again, Apel underlines Peirce's indebtedness to Kant by pointing out that the term pragmatism was derived from Kantian philosophy (Apel, 1981:54). Beyond being a method of clarifying the meaning of concepts and a "science or theory of inquiry", Peirce never intended pragmatism to be a self-sufficient philosophy. He would not reduce truth to arbitrary subjective usefulness or even to the objective operational criteria.

Peirce's writings between 1885-1989 represented what Apel distinguishes as the third period in the development of his thought and is marked by a shift from pragmatism to the metaphysics of evolution. In addition to defending the meaning-critical realism more vigorously, Peirce also engaged, during this period, in bold metaphysical, cosmological and evolutionary speculations, reveal-

ing his architectonic aspirations, which were, however, unfulfilled.

The final period, which lasted from 1898-1914, was the time when Peirce abandoned pragmatism and adopted, instead, the term pragmaticism to finally characterize his thought. Apel argues that at this last stage Peirce returned to his original meaning-critical realism, now enriched and deepened by a more developed doctrine of semiotics. It is this final stage of Peircean inquiry that Apel uses as a basis for his own transcendental pragmatics.

As stated earlier, Apel's proposed transformation of the transcendental philosophy is set against the background of "scientistics, hermeneutics and the critique of ideology.[22] Again, Apel makes clear his opposition to the program of a "unified science" arguing that it attempts to reduce all knowledge into a form of causal explanation, and human cognitive interests into empirically verifiable psychological motivations. Simultaneously, he denies that Gadamerian type hermeneutics is broad enough to be open to both reflection and methodological distinction at the same time. Apel's own model would utilize a "transcendental-hermeneutical concept of language" (Apel, 1973:330) pragmatically interpreted by a "communication community" which also serves as the transcendental premise (1973:220) to assure the validity of knowledge in all sciences, particularly in social sciences.

In several places in his writings, Apel refers to psychoanalysis as a concretely identifiable model to conceptualize the relations between the understanding and explanatory moments in human sciences (cfr. Apel 1967:25-26; 1973:70-77; 1972:33-35). To clarify Apel s use of this model, Radnitzky (1970:43) distinguishes between two conceptions of psychoanalysis: (a) a "pure model" which accords knowledge values the highest rank and (b) the "therapeutic-medical model" which ranks health values the highest. According to Radnitzky, what Apel refers to is the "pure model" in which the analyst and analyzand are in a form of communication that is different from other forms of communication, in that both of them seek to understand truth free from distortion and constraints. Therapy as a form of truth seeking activity utilizes both hermeneutical dialogue (understanding) as well as objectification and distantiation (explanation) in view of increasing the depth and accuracy of understanding. The "tracking back and forth" between the hermeneutic and the quasi-naturalistic phases continues until the analyst and the analyzand are able to speak the same language and maximum understanding is achieved. Similarly, although understanding and explanations are both built-in factors in everyday communication as well as in scientific inquiry, explanation

serves only a "ladder function"; explanation is for the sake of understanding and objectification of human subjects is for the sake of disobjectification. Finally, psychoanalytic therapy demonstrates that the pragmatic use of language is the basis not only for the development of theoretical knowledge but also for an effective critique of human self-estrangement caused by personal as well as institutionalized "neuroses". Critique is liberation.[23]

III. Habermas: The Communicative Validation of Rational Knowledge

Perhaps the contemporary social theorist most well known for his efforts to raise the notion of communication to the status of a paradigm in social theory is Jürgen Habermas. In order to fully appreciate the intent and scope of the Habermasian project it needs to be located within the context of the western neo-Marxist tradition commonly known as critical theory. The original thinkers of the Frankfurt School of Social Research, the school that developed the paradigm of critical theory, included Theodore Adorno, Max Horkheimer, Herbert Marcuse and Eric Fromm. They sought to critique the social conditions of the modern Western world against the backdrop of the Enlightenment. As Max Weber had correctly pointed out, the Enlightenment faith in the progress of reason, pursued through the application of science and technology, had led the Western world into a quagmire of substantive irrationalism and loss of freedom with no hope of escape. The one-dimensional, instrumental reason, separated from ethics and aesthetics and assisted by a capitalist economy and bureaucratic administration, forced social scientists to a despairing surrender to the sphere of subjectivity, being incapable of finding a rational grounding for a critique. Weber's observation conjured up the vision of an ever hardening "iron cage" into which modern society was inexorably being led. Although he was an anti-Marxist, Weber's relentless analysis of the "cultural contradictions of capitalism" unearthed the status of the unyielding rational pessimism. This the convinced capitalists sought to mitigate by pointing to the success of dominating the environment through science and the abundant supply of material commodities which this domination had helped yield. What was lost in this process, however, was reason's ability to critique itself. As capitalists turned into worshippers of the commodity fetish, workers were mollified by the ideology of progress.

George Lukacs, a precursor of the Frankfurtians, was among the first of the Western Marxists to suggest a new hermeneutics of

Marx to redeem the society's ability to critique the process of reification. Realizing that the Weberian thesis of value-freedom in science was part of the self-fulfilling capitalist ideology, early critical thinkers attacked "scientism" that had contributed to the Enlightenment's self-destruction, insofar as science abdicated its capacity for self-destruction. From the beginning of his career, Jürgen Habermas, the latest and the most prolific of the Frankfurtians, distinguished himself from his predecessors by appealing to the positive power of reason to correct the mistaken course that the Enlightenment had taken. He first noted that modernity was characterized by an absence of serious public discussion and an overemphasis on instrumentalism: Observing that the public sphere as a sphere of dialogue had virtually disappeared (Habermas, 1962), and that genuine freedom, informed political participation, and the "mediation between intellectual progress and the conduct life" (Habermas, 1970:58) had been replaced by technocracy, bureaucracy and economics. He advocated the reinstatement of a prolonged rational communication as it had supposedly existed in classical times.[24]

In spite of his incisive criticism of the status of modern society as lacking in critical thinking, self-reflection and rational communication oriented to understanding, Habermas failed, in his early writings, to provide an epistemological basis to ground his key concepts. What is actually meant by rational communication? What are the social and psychological conditions that are necessary for its possibility? How would one distinguish true knowledge from justificatory ideologies. How could answers to these and similar questions be ventured without returning to the battle zones of earlier epistemologies?

Habermas' first attempt to ground the notion of communication and simultaneously to provide an epistemological foundation for social sciences was represented by his landmark work, *Knowledge and Human Interests* (Habermas, 1971). This work represented the culmination of his efforts up to that point and it responded to the epistemological crisis in the social sciences. The full-fledged scientism, strengthened by a positivism, had contributed to the development of a dichotomy between knowledge and norms, fact and value, enlightenment and emancipation. Recognizing the need for a "radical self-critique of epistemology" (Habermas, 1971:15), Habermas set out to found a new type of knowledge and discipline on the basis of which an effective critique of scientism, as well as of society, could be initiated.

Central to Habermas' proposed critique at this stage was his notion of knowledge-constitutive interests. As he saw it, these consisted of the three fundamental cognitive categories of technical, practical and emancipatory interests, thus forming a meaningful basis for classifying sciences into three groups: "empirical-analytic", "historical-hermeneutic" and "emancipatory" (Habermas, 1971:308). Although these three forms of cognitive interests and the corresponding forms of discipline they give rise to are distinct and irreducible to one another, Habermas insisted that there is a dynamic interrelationship among them which is brought into focus by a critical inquiry guided by the emancipatory interest.

Prompted by his belief that the psychoanalytic theory of Freud could serve as a concrete paradigm for a critical theory, that assigns priority to the emancipatory interest and one that employs communication as the preferred means to salvage the original impulse of the Enlightenment, in *Knowledge and Human Interests* Habermas undertook an extensive interpretation of Freud. In his opinion, psychoanalysis is relevant to critical theory insofar as it is a "tangible example of a science incorporating methodological self- reflection". Psychoanalysis helps to uncover those "dimensions of knowledge which 'positivism closed off' " (Habermas, 1971:214). He was aware that Freud's founding of psychoanalysis was not consciously related to the problems of the social sciences. It was originally intended to be a natural science and a medical practice to deal with the psychological problem of neurosis. However, an examination of the context, the dynamics and the goal of the psychoanalytic process would reveal, contended Habermas, its potential as a valuable illustration of the operations of critical theory.

To begin with, psychoanalysis may be looked on as a form of depth-hermeneutics, meaning that the "foreign" language, strange culture or form of life that a neurotic person resorts to is internal to that person's psyche, making him/her incapable of effectively communicating with others including the analyst.[25] The incomprehensibility of the speech, behavior and the body language of a mental patient is not to be understood as a function of his/her involvement in a different "language game", but as an expression of the barrier that the patient has created within himself or herself. Hermeneutically considered, what is noteworthy about neurosis is that it systematically distorts communication, thereby causing the neurotic to be alienated from and misunderstood by the community.

As is commonly known, in a Freudian frame, the theory and the method of dream interpretation has a central role in the approach to treating neurosis. According to Habermas, dream interpretation eminently exemplifies the method of depth-hermeneutics. Freud thought of dreams as having a three-layered structure. The outer layer or the "dream facade" results from the secondary elaborations that take place after the occurrences of the dream during the waking state. The intermediate layer represents "residues" of incomplete or unfulfilled experiences and desires of the previous day. It is in the innermost or deepest layer that one encounters "dream symbols". The analyst acts as a hermeneutician when he or she works at uncovering the meaning of the dream text, in view of understanding not only what was distorted but why the distortions occurred at all (Habermas, 1971:220).

In the process of the "dream work" as a method of hermeneutics, the analyst helps the patient identify the function of the "dream sensor", "resistance" and their origin in "infantile mental life that has been suppressed" (Freud, 1953:567; quoted in Habermas, 1971:225). In and through the complex depth-hermeneutical process, repressed motives find expression, the repressive activity of the censor is intervened, and the private (symbolic) language of the dream text is opened up to make it available for "public" communication.

Quoting at length from Freud, Habermas tried to accentuate the centrality of self-reflection in the process of psychoanalysis. It is not information that accomplishes cure from neurosis but rather self-knowledge obtained through self-reflection in a process of authentic communication. Habermas argued that because self-reflection constitutes the core of psychoanalysis, the latter is essentially an act of critique: it aims to achieve a measure of unity between theory and practice; it combines intellectual enlightenment and behavioral transformation; it joins the cognitive with the affective; and most importantly, its practice is guided by the emancipatory interest. States Habermas:

> It is critique in the sense that the analytic power to dissolve dogmatic attitudes inheres in analytic insight. Critique terminates in a transformation of the affective emotional basis, just as it begins with the need for practical transformation. Critique would not have the power to break up false consciousness if it were not impelled by a passion for *critique* (Habermas, 1971:235).

In addition to its character as critique, what distinguishes the psychoanalytic knowledge from knowledge produced by empirical

sciences is the fact that it is "rooted in the dimensions of ordinary language" (Habermas, 1971:262). Analysis, as a process of communication, is carried out in a language that is comprehensible to the analyzand in his/her life-world. Admittedly, psychoanalysis incorporates the methodological features of both the causal model of explanation and the hermeneutic model of understanding. However, what triumphs in the end is the emancipatory model because the analytic process culminates in overcoming the causal connections of the intrapsychic events, and it re-establishes normal communication. Appealing to a Hegelian perspective, Habermas asserts: "depth-hermeneutic understanding takes over the function of explanation. It proves its emancipatory power in self-reflection, in which an objectification that is both understood and explained is overcome. This is the critical accomplishment of what Hegel had called comprehending (Begreifen)" (Habermas, 1971:272).

Since the publication of *Knowledge and Human Interests*, Habermas has expanded the scope of his theoretical endeavors to an ambitious grand theory, with the help of a comprehensive analysis of the notion of communication, which includes three main components: (1) A "general theory of socialization in the form of communicative competence" (T. McCarthy in Habermas, 1979:XVII), (2) a general theory of society that is unparalleled since the functionalism of Parsons, and (3) a philosophy of the social sciences. For the purposes of the present study, I will pursue the unfolding of his theory of communication as it applies to the philosophy of the social sciences.

The theme of *Knowledge and Human Interests* was further expanded in the essay on "Systematically Distorted Communication," (Habermas, 1970) in which a further inquiry was made about the nature of the distortions which systematically occur in the communicative acts performed by a mentally disturbed person. The purpose of this inquiry was to determine the nature of the conditions that are necessary for a person to engage in competent communication. Following the lead of Arieti s conceptualization of schizophrenic communication, as a symptom of a person's psychic regression to a more primitive level of the process of symbol formation (Arieti, 1955), Habermas locates the origin of the communicative distortions in defective ego development due to inadequate socialization. The schizophrenic, or the paleosymbolic rationality, to use Arieti's terminology, is a more archaic form of rationality rather than irrationality. On the basis of his assumption that there is a possible homology between ego development and societal development, Habermas visualizes the possibility of con-

structing a "solid basis" for a "present day sociology" (Habermas, 1970:217) utilizing a comprehensive theory of communicative competence.

Because of the fact that a specific feature of human communication is that it employs speech, a general theory of communication must address the task of interpreting the development of linquistic competence. Rejecting all "monological models of language" such as Noam Chomsky's "Generative Grammar" (Chomsky, 1957) as inadequate to account for the "intersubjectivity" of the speech situations, Habermas argues that "in order to participate in normal discourse the speaker must have at his disposal" not only certain inborn competencies, but also certain "basic qualification of speech and symbolic interactions (role behavior), which we may call communicative competence". Further, communicative competence involves "mastery of an ideal speech situation" (Habermas, 19 0:367).

Ideal speech situation, which is not a utopia but a necessary counterfactual condition for visualizing the possibility of authentic speech to occur, does not obtain as long as the speaker suffers from self-deception and repressed emotions which interfere with his/her participation in public communication. In addition to this requirement of internal freedom and openess, a situation of ideal speech also requires conditions which guarantee symmetry of power, equality of opportunity to engage in discourse and an absence of external repression by institutions within a given society. In other words, communicative competence presupposes the existence of internally emancipated, autonomous egos, as well as non-repressive societies. One readily notices how Habermas develops the notion of communication into a general and powerful theory of ego development, socialization, and social evolution, as well as a powerful tool to critique unjust social structures.

The most decisive step in the development of Habermas' general theory of communication was reached in the study on "Universal Pragmatics" (Habermas, 1979). The proposed task of universal pragmatics is to "identify and reconstruct universal conditions of possible understanding" (Habermas, 1979:1). Such a task immediately evokes the entire modern history of epistemological controversy from Decartes through Kant to Carnap and Charles Morris. While acknowledging the similarity of his approach to Kant's, Habermas restricts his position to a "minimalist" acceptance of the method of transcendental deduction, insofar as his method involves only an attempt to "discover" universal "concep-

tual structure'' that underlies every ''coherent experience''. To the extent that a ''claim to proof of the objective validity of our concepts'' is given up, universal pragmatics is only a ''weaker version'' of *a priorism* (Habermas, 1979:21). In addition to giving up the claim that the universality and validity of our knowledge can be *a priori* demonstrated, the weaker version also recognizes that all our knowledge is ''hypothetical'' in form and needs to be ''tested against new experiences''. Thus, there is no sharp ''separation'' between empirical and transcendental analysis, *a priori* and *a posteriori* knowledge. Further, the focus of universal pragmatics is not to discover how experience is constituted but rather how understanding through communication is possible.[26]

Habermas is also careful to enunciate some similarities and differences between his theory of communication and contemporary theories of language. He is in agreement with Apel's criticisms of logical positivism (proposed by Carnap, earlier Wittgenstein, B. Russel, et. al.), and points out that contemporary versions of psycholinguistics, linguistic behaviorism and other empiricist derivations of the semiotics initiated by Charles Morris are inadequate to account for the ''intersubjectivity of meanings'', because meaning cannot be reduced to psychological changes, or properties of behavior (Habermas, 1979:6). What is required for developing a theory of communication in language, that is usable to ground social sciences, is not merely to focus on a formal syntactics or semantics, but rather on pragmatics or a theory of speech acts along the lines of inquiry that is opened up by such writers as Austin, Searle and Wunderlich (Habermas, 1979:7)[27]

Speech acts considered as instances of communications of meaning in language, when subjected to analysis, need vindication in terms of their validity basis. Every person who presumes to utter a sentence in a situation of communicative action implicitly makes certain universal and necessary claims in the very act of performing the utterance: He/she claims that he/she is ''(a) uttering something understandably; (b) giving [the hearer] something to understand; (c) making himself/herself thereby understandable; and (d) coming to an understanding with another person'' (Habermas, 1979:2). The four implied validity claims that are necessary for an act of communication to take place are, thus, ''comprehensibility, truth, truthfulness and rightness''. Naturally, if all these conditions of validity are always met, there would not arise a need to delve into the details of the communicative act. In reality, however, incomprehensibility, untruthfulness, and disagreement about what is right often impede the process of communication and

understanding. Further, in normal communication the validity claims are rarely made the explicit focus of analysis although they are always presupposed. When communication becomes problematic and social relations breakdown, we are faced with two alternatives: either resort to "strategic action" (which may include manipulation through physical or psychological force or repression into "systematically distorted communication", mentioned above) or discursively examine the problematic validity claims, which is the truly rational alternative.[28] Strategic action does not possess ultimate justification devoid as it is of true rationality.

Habermas' argument that the claims of validity of any and every utterance can be redeemed or vindicated only through discourse or rational argumentation has far reaching implications for a theory of science, for a theory of moral norms, as well as for social and political praxis. No statement is ultimately true unless the ground upon which its worthiness to be recognized as true is consensually established by the participants in communication. Thus implied behind this position is a consensus theory of truth as opposed to an Aristotelian, Cartesian or Leibnizian model of correspondence theory. There is no independent criterion for truth outside of the argumentative context itself so that participants have to engage in discourse regardless of the length of time it may take to reach a consensus. Further, every achieved consensus is provisional and open to re-examination indefinitely.[29]

Habermas diverges from Austin's and Searles's speech act theory in several important respects. First, in addition to sharing the concern of the speech act theory for "linguistic rule competence", universal pragmatics concentrates on the conditions of the general "communicative competence", regardless of the particular language that a speaker employs in sentences. Secondly, a clear distinction is drawn between sentences and utterances. Uterance of a sentence requires the speaker to fulfill not only the requirements of phonetics, syntactics and semantics but also the "general presuppositions specific to the *telos* of communication" (Habermas, 1979:27). That is to say, an act of utterance must fulfill not only the validity claim to comprehensibility but also to truth, sincerity and legitimacy in the intersubjective context. It is Habermas' belief that the *telos* of communication is reaching understanding[30], and for understanding to occur all the general conditions of validity must be met.

The paradigmatic case of an utterance that is suitable for demonstrating the elements of universal pragmatics possess the following characteristics: (1) It is "propositionally differentiated",

meaning that an utterance must not be an abbreviated one either non-verbally or illocutionarily because such abbreviations would make it dependent on specific contexts and particular cultural conventions; (2) It must be "institutionally unbound" in the sense that it must not be tied to narrow conditions of particular institutions; (3) It must belong to the category of communicative action, not strategic action as explained above (cfr. Habermas, 1979:36-40).

The notion of "reaching understanding" has, admittedly, two distinct levels of meanings: understanding at the "level of the propositional content" of the utterance and understanding at the "level of intersubjectivity". It is important to keep in mind that universal pragmatics aims at reconstructing the role of speech acts at both of these levels — normative and interactive — in order to be able to serve as a theory of meaning as well as a theory of a rational basis for a normative social order. Both levels of meaning are intimately related, however, insofar as the power that a speech act possesses to coordinate an action of the participants in communication is ultimately derived, not from fear, institutional pressure or other irrational forces, but from a mutual recognition of truth or reason in the sense of a "reciprocal recognition of validity claims (Habermas, 1979:63).

Against the background of his theory of communication in the form of universal pragmatics, Habermas develops the concept of rational reconstruction to describe the nature of the social sciences, and he evaluates the appropriateness of a variety of approaches as possible methodologies in responding to the question of "truth" in the social sciences. Rational reconstruction, as a method of clarifying "frameworks of basic concepts", of "formalizing assumptions", of "clarifying deductive relations among hypotheses". of "interpreting results of measurement", etc., is employed, notes Habermas, by all sciences including empirical-analytic ones (Habermas, 1979:8-9). Empirical sciences, however, do not theorize the procedures and problems involved in rational recontruction. Human sciences, in contrast, are faced with the burden of "systematically" reconstructing "the intuitive knowledge" of humanity. It is this focus on rational reconstruction that distinguishes the humanities from natural sciences.[31]

The distinction between the methods of sciences and reconstructive (social) sciences can be further elucidated in terms of observation and understanding (verstehen) (Habermas, 1979:9). Whereas observation, in principle, does not require participation in communication, understanding does, because of the mediate and symbolic character of interpretation.[32]

The realization that the social sciences primarily belong to the meaning-seeking enterprise of the human race has, in the recent past, raised the question, with renewed vigor, of an appropriate method. As Habermas also is aware, an extreme form of hermeneuticism that is inspired by a Heideggerian ontology avoids the questions of method itself by opposing truth to method.[33] At the other end of the spectrum, "a post-empiricist philosophy of science has demolished the authority of logical positivism. Furthermore, mainstream social sciences whether it be Parsonian sociology, Keynesian economics or Skinnerian behaviorism in psychology, have failed miserably to deliver on their promises. This failure has spawned a confusing array of methodologies from phenomenology to post-structuralism and the debate continues, in various forms, between the proponents of understanding and explanation.[34]

Habermas believes that his universal pragmatics opens the way for a new conceptualization of the methodology of the social sciences which he calls rational reconstruction. Social scientific theories are neither objective disciplines nor purely subjective interpretations, but rather reconstructions which possess three general characteristics: (1) by explicating "the conditions of validity" they allow for the development of a critical stance; (2) by pushing "differentiation between particular validity claims beyond the limits where they have been traditionally drawn" they have the ability to propose new standards for understanding our social world; and (3) by establishing "general conditions of validity" they can help "identity universals" and "theoretical knowledge" (Habermas in N. Haan, et. al., 1983:260). Although rational reconstructions do not claim to provide "ultimate foundations" in the Cartesian or Kantian sense, they do offer a rationally defensible basis to separate systematic distortions and deviations from normative ideals. A case of a successful rational reconstruction in which the hermeneutic dimension and empirical analysis are properly combined to generate "theoretical knowledge" is Kohlberg's theory of moral development.[35]

IV. Epistemology and Sociology*

The empiricist-positivist epistemology, despite the fact that it is under attack by a growing number of philosophers of science and scientists themselves[36], continues to maintain its hegemony and relies on a set of uncritical and indefensible assumptions about the knowers, the object of knowledge and knowledge itself. About the

*Foundational Assumptions of Knowledge Claims

I. Assumptions about the Subject

Empiricist-positivist

Subject

1. Subjects exist in isolation and act as independent monads.
2. Individual subjects are autonomous entities, capable of separating truth from error.
3. Subjects who err are individually responsible.
4. Individuals' physical and psychological competencies assure their ability to overcome errors.
5. Individual subjects are ahistorical entities in the act of knowing.
6. Subjects create categories indpendently of ideologies, cultural values and interests.
7. Individual interactions are not essential to the production of cognitive systems.
8. Individuals are the ultimate subjects of knowledge.
9. Society is the sum total of individuals.

Transitional Models

Kantian-Rationalist

Peircean-Semiotic

Communicative-sociological

Subject

1. Individuals can neither exist nor act independently of societies.
2. It is society, not individuals, that can tell truth from error.
3. The final responsibility for truth and error rests on societies, not on individuals.
4. Individual competencies are the reflection and the result of socialization into the norms of a particular society.
5. Individual minds participate in the historical conditions and events of the society of which they are members.
6. Cognitive categories are socially constituted and essentially dependent on ideological, cultural and economic interests.
7. It is society, not individuals, that is the ultimate subject of knowledge.
8. Cognitive competencies are socially constituted.
9. Society is more than the sum of individuals in its function of producing cognitive systems.

*Foundational Assumptions of Knowledge Claims

II. Assumptions about the Object

Empiricist-positivist

Object

1. Objects are discrete entities or events.
2. Objects are classifiable according to their quantitative or quantifiable attributes which exist independently of the subject.
3. Objects exist independently of their being perceived.
4. Objects are ahistorical entities.
5. What is not experimentally or logically verifiable by individuals does not exist.
6. Categories of knowledge are representative of objects.
7. Objects are definable independently of ideologies and cultural assumptions.
8. Objects as hard facts impose themselves upon the mind.
9. Objects are knowable (logically analyzable) in principle.
10. Objects, as they exist, are the final criteria for truth.

Transitional Models

Kantian-Rationalist

Peircean-Semiotic

Communicative-sociological

Object

1. Objects do not exist apart from a communicative context.
2. Objects are distinguishable according to various formal worlds.
3. Existence of objects is unverifiable apart from the context of communication.
4. Objects are ahistorical entities subject to being conceived differently at different time periods.
5. "Verification" is a communicative process.
6. Categories are communicatively constituted and have a symbolic character.
7. Ideologies and life-world condition our definition of objects.
8. Objects, when communicatively validated, impose themselves on the mind.
9. Objects are only communicatively knowable.
10. Rational discourse is the final criterion of truth.

*Foundational Assumptions of Knowledge Claims

III. Assumptions about the Nature of Knowledge

Empiricist-positivist

Knowledge

1. Knowledge consists in individual mind's grasp of the object as it exists.
2. Knowledge itself is valid independently of the mind that produced it.
3. True knowledge it valid for all times.
4. True knowledge is available for verification by independent subjects.
5. The method of obtaining knowledge consists of description and logical ordering.
6. Ideologies either do not exist or are irrelevant in the production of knowledge.
7. Knowledge exists independently of particular cultures.
8. Knowledge has a logical structure.
9. The purpose of knowledge is increased control of self, others and evironment.
10. Knowledge that is not utilizable is not worth pursuing.

Transitional Models

Kantian-Rationalist

Peircean-Semiotic

Communicative-sociological

Knowledge

1. Knowledge consists in a rational construction that is communicative.
2. Validity of statements are open to rational argumentation.
3. Knowledge claims are never fully established.
4. Knowledge is verifiable only in the context of communication.
5. Descriptions and logical reasoning must be supplemented by interpretation by participants in communication.
6. Ideologies condition knowledge, so that critique of ideology is a necessary task of epistemology.
7. Knowledge claims exist against the back-ground of a non-objectifiable life-world.
8. Knowledge has a communicative structure.
9. In addition to control, emancipation from oppression is a function of knowledge.
10. "Useless" knowledge may be valuable as a critique.

*Foundational Assumptions of Knowledge Claims

IV. Sociological Model

Subject	Object	Knowledge
1. The ultimate subject of knowledge is society at various levels (classes, communities, nations).	1. Objects have no existence independent of the society.	1. Knowledge consists in social constructions that may be open to discursive verification.
2. In developed societies (organic societies) there are competing social subjects who raise competing truth claims.	2. Objects of knowledge are subjected to the dynamics of competition among social groups.	2. Knowledge claims participate in the socio-economic competitions among social groups.
3. Responsibility for establishing truth claims resides in the society.	3. Existence of objects is not verifiable apart from the context of social processes.	3. Knowledge is relative.
4. Social norms limit social groups in their choice of what counts as valid knowledge.	4. Social norms play a decisive role in defining what counts as a knowable object.	4. Social norms play a role in defining what counts as knowledge.
5. Society, as guarantor of truth, is socio-historically determined.	5. Objects are socio-historically determined.	5. Knowledge is socio-historically determined.
6. Cognitive categories are expressive of social praxis.	6. Objects of knowledge are generated in the context of social praxis.	6. The generation of knowledge is a function of social praxis, that includes the organization of labor.
7. Societies create ideologies to justify group interests which undergird cognitive interests.	7. Ideologies and cognitive interests include or exclude certain object domains.	7. The ideologies and interests of social groups influence both the content and the form of knowledge.
8. Society organizes areas and types of knowledge in a prestige hierarchy, to suit the interests of dominant groups.	8. It is not the character of the object, but the character of the society that makes a certain object worthy of being known.	8. Knowledge itself shares in the hierarchical ordering of a society.
9. Societies institutionalize areas of knowledge that the dominant groups find useful to defend and promote their interests.	9. Social institutions can create as well as destroy objects of knowledge.	9. Knowledge is controlled by social institutions in its origin, development and dissemination.
10. Disadvantaged groups are often unsuccessful in making their cognitive claims achieve the status of knowledge.	10. "Important" objects are often the reality of the powerful groups in a society.	10. What does not benefit the dominant social groups is considered useless knowledge.

knowers it makes several assumptions, such as: (1) that they operate in isolation as independent, self-sufficient monads, solely responsible for the correctness of their discoveries or for the errors in their conclusions; (2) that they are unaffected by the socio-historical and cultural determinations of their "life-world" in the process of knowing; (3) that they can invent concepts about realities without considering existing social conventions and without being influenced by prior assumptions and ideologies; and, (4) further, that individual knowers are the final judges of truth.

Concerning the object of cognition, the assumptions which underlie the empiricist-positivist paradigm include the following: (1) that objects exist in the form of discrete quantities, classifiable according to a clear system of logic; (2) that they exist independently of the knower, essentially unrelated to social and historical conditions and acting as final criteria for truth; (3) that they are verifiable by independent observers; that they are hard facts which impose themselves upon the mind, needing no interpretation, but only classification, verification and logical analysis.

The empiricist-positivist assumptions concerning the nature of knowledge include such beliefs as: (1) Knowledge consists of a correspondence between subject and object; (2) that anything that counts as true knowledge is valid and reliable independently of the individual knower; that it is available to every knower for independent verification; that knowledge itself has a logical structure, reflecting a logical universe; (3) that knowledge is ahistorical[37] (4) that its goal is to control and predict events and processes of the material as well as of the human world. Kant was one of the most prominent epistemologists to challenge these Cartesian-Leibnizian empiricist assumptions[38], with his doctrine that de-emphasized the activity of the object in favor of the constructive operations of the subject . Kant argued that order and rationality are defensible in-spite of the unknowable, phenomenal and intrinsically chaotic character of the objective world. In so doing, he claimed that categories have a transcendent origin in the subject which assures their universality and necessity. The final result of the Kantian enterprise was, however, a further distantiation of individual knowers from the process of history. Science for Kant, thus, consisted of a dyadic relation between an impersonal, isolated, ahistorical individual and the world.

Peirce transformed the Kantian epistemology in two important ways: First, knowledge is essentially a semiotic action having a triadic structure consisting of a sign, the signified and the logical in-

terpretant. Second, because of the fact that the logical interpretant acts as a sign for other interpreters or for the interpreter himself/herself in the future, knowledge necessarily postulates the existence of an indefinite and ever expanding universe of knowers. Inquiry is, thus, a social and historical activity. While such a view intrinsically links knowledge with society and history, thereby undermining the empiricist paradigm, it suffers from a fundamental weakness: Peirce assumes the existence of an ideal community of inquirers who are solely motivated by the desire to "find things."

Apel builds on Peirce's strength by describing the process of inquiry as a process of communication. By doing so, he demonstrates that all sciences, whether natural or social, do employ the method of explanation as well as the art of interpretation as two necessary and dialectically linked moments, which naturally include as well as exclude one another. A "pure" form of psychoanalytic therapy is utilized to map this communicative model. Similar to Peirce, Apel also abstracts from the historical and sociological conditions of the differential distribution of power and opportunities, as well as the influence of macro events and social structures on the development of knowledge. Again, the implied impersonality and ahistoricality of this model makes it vulnerable to some of the same criticisms which may be leveled against a Cartesian-Leibnizian rationalism. Nevertheless, somewhat inconsistently, Apel is aware of the influence of ideology on the development of knowledge, which he is anxious to critique.

It is Jürgen Habermas who raises the notion of communication to the status of a philosophy of the social sciences as well as a general social theory by proposing a theory of pragmatics that is sensitive to contemporary philosophical developments as well as to the need for a rational basis to critique the ideology of scientism. Despite the comprehensiveness and the imposing seriousness and depth of his analysis, Habermas's theory of communication flirts with the Kantian *a priorism*, ethnocentrism[39], impersonality and an idealized conception of rational communication.[40]

Perhaps, a discussion of the faulty epistemological assumptions of positivism is likely to have a very limited impact upon the power structures of knowledge. Natural sciences continue to espouse an empiricist-positivist epistemology quietly assuming that individual knowers practice science in revered isolation according to the norms of "universalism, communalism, disinterestedness and organized scepticism" (Merton, 1973), partly because such an

epistemology serves as a justificatory ideology for what is valuable in a capitalist culture: individualism, elitism, ahistoricality, self-interest, "free" competition, domination, and exploitation. The models of knowledge proposed by Peirce, Apel and Habermas are reactions to the limitations of this model by introducing the notion of community into the equation of knowledge itself. With the help of his notion of semiotics, Peirce changed the cognitive equation from a dyadic relation to a triadic one. The category of Thirdness is irreducible to Firstness or Secondness, and the process of mediation is the only available process for human beings to generate as well as to communicate knowledge. The Peircean Thirdness takes the form of the *a priori* of communication in Apel and the Communicative rationality in Habermas. The interpretive and communicative elements invariably intervene, it appears, in the relation between subject and object, as well as the very constitution of the subject and the object.

In spite of the infusion of the spirit of Thirdness and communication into the power game of scientific communication, it must be noted that the proposed models avoid suggestions for a radical critique of the oppressive and authoritarian ideology of scientism. That the semiotic model, brilliant though it is, is bereft of a real critical impact is born out by the course that mainstream semiotics has taken.

The model of a Freudian psychoanalysis employed by Apel and Habermas appears inadequate to serve as a paradigm either for ideal communication or for ideology critique for a variety of reasons. The original Freudian model was, without a doubt, a "naturalistic" and a reductionist approach for the treatment of the mental illness of neurosis, as Habermas recognizes. Critics of the "myth" of mental illness from Laing to Szasz and Foucault have pointed out that the medicalization of "madness" is another instance of the empiricist-positivist ideology in operation in the service of those who control the power structures of a society. Habermas' de-scientization of psychoanalysis adds more confusion than clarity to the role of self-reflection in view of proposing it as an example of a critically developed knowledge, precisely because mainstream psychiatrists and psychologists are in no mood to accept the Hegelianized interpretation of Freud that Habermas offers.[41] Harking back to the Hegelian theme of alienation and reconciliation, Habermas claims: "as in Hegel's dialectic of the moral life, the criminal recognizes in his victim his own alienated essence, in the self-reflection the abstractly divorced parties

recognize the destroyed moral totality as their common basis and thereby return to it" (Habermas, 1971:235). What is unacceptable about a Hegelian intellectualization of alienation is that it is far removed from the socio-historical conditions of concrete human societies As Marx has eloquently pointed out, alienation is not merely a function of cognition, but a deplorable state of affairs produced by the conditions of labor. The assumption that the socially induced suffering can be overcome in and through a process of individualized therapy is sociologically unsupported. Hence states Bernstein: "We might interpret his [Habermas's] thought as a retreat from Marx to Hegel" (Bernstein, 1982:216).

The model of communication used in therapy to map the features of an ideal speech situation is controversial, because of the imbalance of power that exists in the analytic situation. Unlike the case of public dialogue, the analyst does not engage in therapeutic communication as an equal partner. If knowledge is power, the analyst possesses almost all of it in two important ways: First, as an expert it is his/her interpretation that is assumed be the valid one, and it is his/her language that the analyzand is expected to internalize. Secondly, while the analyzand is expected to reveal his/her innermost thoughts and feelings, the analyst reveals very little about himself/herself to the analyzand.

The notion of the ideal speech situation as a counterfactual condition is essential to Habermas' notion of communication. It is also one of his most controverted constructs.[42] As Bernstein points out, the argument that all speech "presupposes and anticipates" ideal speech is misleading. Empirical conditions exist where individuals and groups may choose to consciously or unconsciously deceive the participants. Most importantly, argues Bernstein, the notion sheds no "light on what leads human beings to overcome forms of distorted communication" (Bernstein, 1982:223). Rational communication can hardly exist as long as the social forces of inequality, domination and interest in control continue to determine the form and content of social relationships.

A final conclusion that may be drawn from this discussion is that the traditional question of whether sociology, and for that matter the "human sciences", is a true science is an obsolete one. Not only is there no particular benefit to be derived from trying to establish the "scientific" character of the human sciences, but also such efforts may backfire because of the current state of hegemony that the "natural" sciences enjoy, unless the community of scholars are willing to reinstate the original meaning of the term science

(scientia): systematic and rationally justifiable knowledge be it chemistry or theology.

The historical context of narrowing the term *scientia* to include only those activities which help control and predict the course of natural occurrences resulted from the productive demands of the Industrial Revolution. Natural sciences acquired a measure of social prestige only when they merited academic and public support because of their proven utility in advancing the processes of the Industrial Revolution. Especially noteworthy is the fact that until the end of the last century only a few universities included natural sciences in their curricula as a course of study that was worthy of academic recognition.

Because of their progressive institutionalization and the position of dominance to which they have risen as a result of their institutionalization, the natural sciences wield enormous influence on the definition of what counts as knowledge, and the practitioners of the natural sciences have come to assume the role of the "new Brahmins" in the temples of learning across the world. They coerce with their prestige and newly found authority the practitioners of other rituals to emulate them as role models. In a world that unquestionably attaches prestige to wealth and power, it is not surprising that these new high priests are not only cognitive elites but also social elites due to their close affiliation with government, industry and the institutions of warfare. With the unreserved support of these institutions of power, they also share the authority to downgrade, discount or even dismiss the legitimacy of other forms of knowledge.

On closer analysis, it becomes clear that the term "science" is sociological in its meaning because of the interests and the destiny it shares with other socio-historical determinants that affect the human condition. Science is no more a disinterested observer, it is a powerful social actor. Similar to other cultural manifestations, cognitive enterprises are fated to reflect and participate in that universal phenomenon of social stratification that is based upon the omnipresent competition among unequal social groups.

NOTES

[1]For instance, Martin Jay states: "When intellectual historians of the next century come to write their accounts of their own, they will inevitably remark on the dramatic quickening of interest in virtually all disciplines in the question of language" (in LaCapra and Kaplan, 1982:86).

[2]See Feibleman (1969) for a detailed discussion of Peirce's indebtedness to Kant.

[3]Although Peirce intended to develop an archetectonic, he was unsuccessful to achieve this goal. States J. Buchler: "In his quest for magnificent array, in his design for a mighty temple that should house his ideas, Peirce failed." (Buchler, 1955:xvi). Attempts have, however, been made to interpret his philosophy from a systematic point of view, e.g., J. K. Feibleman (1969).

[4]See Bulcher (1966) for an enlightening discussion of Peirce's empiricism and commonsensism.

[5]Peirce was particularly influenced by one of the famous scholastics, Scotus Erigena (Peirce, CP:4.50).

[6]Cfr. Davis (1972) where Davis refers to Peirce's tendency to "flirt with" positivism.

[7]Peirce associates positivism primarily with the methodology of empiricism. Positivism's failure consists in its inability to distinguish between perceptions and knowledge. Strangely, though, Peirce is not opposed to a rationalist version of positivism, such as that of Poincare and Karl Pearson. See Buchler (1966:122).

[8]The sociological implication of realism versus nominalism is significant. Nominalism is premised on Protestant individualism according to which society is nothing more than a collection of isolated individuals. See C. Wright Mills (1964:191-204) for a discussion of Peirce's realist epistemology.

[9]The idea of "continuous struggle" appears to owe its origin to the evolutionary Perspectives which were so dominant during the 19th century. Peirce, however, does not limit himself to a Darwinian view of evolution (Peirce, CP:293-95).

[10]Peirce's reflections on probability are based on Venn's *Logic of Chance*.

[11]The notion of probability, important as it is for the method of natural sciences, has been the subject of detailed discussion by almost all prominant philosophers of science including Popper (1959:146-214), Hempel (1965) and Carnap (1962) among others. Peirce's theory of probability and the sensitivity with which he faced the logical problems involved here are still unsurpassed in many respects. Cfr. E. Madden in Moore and Robin (1964).

[12]Cfr. Everett Mendelsohn (1977).

[13]Peirce did not espouse any particular theory of evolution. He did, however, devote a significant length of space in his writings to the question of the evolutionary origin of life forms.

[14]Nagel states clearly the empiricist principle: "it is a basic principle of contemporary empiricism that a sentence makes a cognitively significant assertion, and thus can be said to be either true or false, if and only if either (1) it is analytic or contradictory—in which case it is said to have purely logical meaning or significance—or else (2) it is capable, at least potentially, of text by experimential evidence—in which case it is said to have empirical meaning or significance" (Hempel, 1965:101). Nagel gives an emphatically negative response to the following questions that he pointedly raises: (1) Are the distinctions required for exploring that subject matter exclusively "subjective"? (2) Is a "behaviorist" account of social phenomena inadequate? and (3) Do implications of "subjective" states to human agents fall outside the scope of the logical canons employed in inquiries into "Objective" properties? (Nagel, 1961:475).

[15]Pure hermeneuticians propose hermeneutics as the exclusively correct method, in opposition to positivism, thereby committing the scientific fallacy of individualism. However, Dallmayr argues that Apel's criticism of Gadamer is unjustified: "In my view, what distinguished Gadamer's hermeneutics from both idealism and naturalism is his abandonment of monologue" (Dallmayr, 1987:121).

[16]Compare with Erik Erikson's psychohistory.

[17]Consider, e.g. Hegel's statement: "the truth is the whole...of the Absolute it must be said that it is essentially a result, that only at e end is what is in very truth" (Hegel, 1966:82).

[18]For a brief history of the controversy refer to "Translator's Introduction" to Apel's work, *Understanding and Explanation: A Transcendental-Pragmatic Perspective*, MIT Press, Cambridge MA: 1984. Apel distinguishes three phases of the controversy: (1) "Grounding the Interpretive Geisteswissenschaften or cultural sciences" in the works of Dilthey, W. Windeland, H. Rickert and later, in Max Weber; (2) "The Neo-positivistic explanation in 'unified science'" whose chief proponents are K. Popper, C. Hampel and P. Oppenheim; and (3) "The New Wittgensteinian Neo-Dualism" found in the works of W. Dray, G. E. M. Anscobe, R. Q. Collingwood and Peter Winch, to mention a few.

[19]The term pragmatic must be understood in the tradition of language analysis, especially as expounded by Charles Morris who has distinguished three distinct programs within language analysis: Syntactas, semantics and pragmatics (cfr. Charles W. Morris, "Foundations of the Theory of Sign," in *Encyclopedia of Unified Science, I no. 2*, Chicago, 1938).

[20]The three categories are: quality, relation and mediation or representation (later called firstness, secondness and thirdness); the three corresponding sign types are: icons, indices and symbols. The three forms of inference are: abduction, induction and deduction.

[21]It may be objected that Peirce precisely wanted to replace "transcendentalism" with his logic of inquiry called pragmaticism. Apel's use of the term in describing Peirce's thought is defensible, however, inasmuch as truth is that which transcends individual opinions.

[22]See the chapter under the same title in Apel, 1980:46-65.

[23]See below for a critique of the use of psychoanalysis as a model.

[24]This may be an idealized view of classical politics. The fact that even in Sparta and Athens certain categories of people such as slaves, women and foreigners were not allowed in public discussion was indicative of the limitations of classical democracy.

[25]"Depth-Hermeneutics" is different from the hermeneutics that was initiated by Dilthey and others as a method of interpreting classical texts belonging to a different language, period of history or cultural conditions. Dallmayr points out some of the differences between Apel's and Habermas's use of the psychoanalytic model (Dallmayr in *Man & World*, vol. 5:90-93).

[26]Such a position, admittedly, is comparable to the "transcendentally oriented pragmatism of C. S. Peirce."

[27]Reference here is to such works as, e.g., J. L. Austin, *Fur Theorie der Sprechakte* (Stuttgart, 1972); D. Wunderlich, *Grundlegen der Lingustik* (Hamburg, 1974); Austin, *How to Do Things with Words* (1962).

[28]Communicative action is formally distinct from discourse. Communicative action consists in everyday social interaction of persons who take for granted the beliefs, norms, and practices of their social world. The need for discourse arises when the validity of these taken-for granted elements of social praxis are questioned. Through discourse, the problematic elements are "thematized", and the underlying "validity claims" are carefully examined and vindicated Habermas, 1973:214-15).

[29]Here one is reminded of the Peircian-Apelian notion of an indefinite communication community as the transcendental subject of knowledge.

[30]If it is denied that the goal of communication is reaching understanding, such a denial involves a contradiction between what is explicitly stated and what is implicitly intended. Whether the utterance is affirmative or negative, by uttering something the speaker intends that the listener understands what is being uttered, and thus comes to understanding in regard to that something.

[31]No discerning scientist, however positivistically oriented he/she is, would deny that descriptions are guided by anticipatory explanations in terms of macro-level theories and assumptions, which themselves are non-falsifiable.

[32]Recall Peirce's explanation of meaning as having a semiotic (triadic) structure.

[33]See Gadamer, *Truth and Method*.

[34]R. Bernstein, *Restructuring of Social and Political Theory*.

[35]See Kanjirathinkal (1990) for a critique of this theory.

[36]The quantum theory in physics, regardless of Einstein's endorsement of the empiricist paradigm, contains a radical threat to the traditional assumptions about a well ordered universe. If the subatomic particles exhibit indeterminacy, as demonstrated by Heisenberg, insofar as their location and velocity cannot be simultaneously observed, and they cannot be observed at all without being modified by the act of observation, the assumed "objectivity" of reality and the neutrality of scientific observations are seriously jeopardized. From another point of view, the modern chaos theories also radically challenge the linear-causal model of scientific explanation and the implied assumption of an ordered universe. See, for instance, Nick (1985) and Gleick (1987). I acknowledge indebtedness to Ian King for heightening my awareness of the implications of these theories for social sciences during a NEH Summer Seminar at Duke University under the direction of Edward Tiryakian.

[37]Popper's description of objective knowledge is quite revealing in this context. He states: "Knowledge in an objective sense is knowledge without a knower; it is knowledge without a knowing subject" (Popper, 1972:109).

[38]On the empiricist side itself, Hume also challenged these assumptions, but unlike Kant, he embraced a form of scepticism denying the ultimate ground for any knowledge whatsoever other than sense experiences.

[39]See Giddens, in Berstein, (1985:118).

[40]In spite of the apparent rational clarity of Habermas's analysis of pragmatics, the notion of communication also contains several ambiguities. See, for instance, Dallmayr, 1987:85-86.

[41]Cfr. R. Keat (1981) for a discussion of Habermas' "misinterpretation of Freud".

[42]Cfr. Held (1980) for a criticism of this concept.

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